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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR   | ATTORNEY DOCKET NO.  | CONFIRMATION NO. |
|--|-------------|------------------------|----------------------|------------------|
| 10/759,523   | 01/16/2004  | Paul Anthony Thomas    | 60130-1987;03MRA0008 | 7042             |
| 26/096 7590 04/18/2008<br>CARLSON, GASKEY & OLDS, P.C.<br>400 WEST MAPLE ROAD<br>SUITE 350<br>BIRMINGHAM, MI 48009 |             |                        |                      |                  |
| EXAMINER<br>KING, BRADLEY T  |             |                        |                      |                  |
| ART UNIT<br>3683   |             | PAPER NUMBER           |                      |                  |
| MAIL DATE<br>04/18/2008  |             | DELIVERY MODE<br>PAPER |                      |                  |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

1 UNITED STATES PATENT AND TRADEMARK OFFICE

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3  
4 BEFORE THE BOARD OF PATENT APPEALS  
5 AND INTERFERENCES  
6

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8 *Ex parte* PAUL ANTHONY THOMAS and PAUL ROBERTS  
9

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11 Appeal 2008-0173  
12 Application 10/759,523  
13 Technology Center 3600  
14

15  
16 Decided: April 17, 2008  
17  
18

19 *Before* WILLIAM F. PATE, III, TERRY J. OWENS and MURRIEL E.  
20 CRAWFORD, *Administrative Patent Judges*.

21  
22 PATE, III, *Administrative Patent Judge*.

23  
24 DECISION ON APPEAL  
25

26 STATEMENT OF CASE

27 The Appellants appeal under 35 U.S.C. § 134 (2002) from a Final  
28 Rejection of claims 1, 4-19 and 21. Claims 2, 3 and 20 have been cancelled.  
29 We have jurisdiction under 35 U.S.C. § 6(b) (2002).

30 The Appellants claim a disc brake assembly including a pad spring  
31 having a laterally and downwardly extending lug. The lug includes an upper

1surface with a rounded edge that reduces the tendency of the pad spring to  
2indent into the pad retainer (i.e. wedge into the pad retainer) which can  
3impede movement of the brake pad and diminish braking performance.

4 Independent claim 1 reads as follows:

- 5 1. A disc brake assembly comprising:  
6 a brake caliper having an outboard side;  
7 a brake pad;  
8 a pad spring including a spring planar region, wherein the  
9 pad spring is substantially elongate and defines a longitudinal  
10 direction; and  
11 a pad retainer including a retainer planar region  
12 positioned at a first radius to restrain radial movement of the  
13 brake pad, wherein the pad retainer is secured to the outboard  
14 side of the brake caliper at a second radius that is less than the  
15 first radius, the pad retainer further including a crook at an end  
16 of the retainer planar region,  
17 wherein the spring planar region engages the pad  
18 retainer, thereby defining an engaging region of the spring  
19 planar region, and  
20 wherein a lateral edge region of the engaging region  
21 adjacent to the outboard side of the brake caliper is defined by a  
22 laterally and downwardly extending lug having an upper  
23 surface, wherein the upper surface defines a rounded edge.  
24

25 Independent claim 13 also recites a disc brake assembly including a  
26pad retainer and a pad spring having a laterally and downwardly extending  
27lug that incorporates an upper surface with a rounded edge. Independent  
28claim 21 recites a method of making a disc brake assembly including a pad  
29spring with a laterally and downwardly extending lug having an upper  
30surface with a rounded edge.

1 The prior art relied upon by the Examiner in rejecting the claims is:

|        |                 |               |
|--------|-----------------|---------------|
| 2Heinz | 4,049,087       | Sep. 20, 1977 |
| 3Forni | EP 0 703 378 A1 | Mar. 27 1996  |

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5 The Examiner rejected claims 1, 4-19 and 21 under 35 U.S.C.

6§ 103(a) as unpatentable over Forni in view of Heinz.

7 We REVERSE.

8

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#### ISSUE

10 The sole issue raised in the present appeal is whether the Appellants  
11have shown that the Examiner erred in rejecting claims 1, 4-19 and 21 as  
12unpatentable over Forni in view of Heinz.

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#### PRINCIPLES OF LAW

15 “Section 103 forbids issuance of a patent when ‘the differences  
16between the subject matter sought to be patented and the prior art are such  
17that the subject matter as a whole would have been obvious at the time the  
18invention was made to a person having ordinary skill in the art to which said  
19subject matter pertains.’” *KSR Int’l Co. v. Teleflex Inc.*, 127 S.Ct. 1727,  
201734 (2007). The question of obviousness is resolved on the basis of  
21underlying factual determinations including (1) the scope and content of the  
22prior art, (2) any differences between the claimed subject matter and the  
23prior art, (3) the level of skill in the art, and (4) where in evidence, so-called  
24secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18

1(1966). In *KSR*, the Court explained that “it will be necessary for a court to  
2look to interrelated teachings of multiple patents; the effects of demands  
3known to the design community or present in the marketplace; and the  
4background knowledge possessed by a person having ordinary skill in the  
5art, all in order to determine whether there was an apparent reason to  
6combine the known elements in the fashion claimed by the patent at issue.”  
7*Id.* at 1740-41. The Court noted that “[t]o facilitate review, this analysis  
8should be made explicit,” but “the analysis need not seek out precise  
9teachings directed to the specific subject matter of the challenged claim” *Id.*  
10at 1741, citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006).

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## ANALYSIS

13 The Examiner rejected all of the pending claims as unpatentable over  
14Forni in view of Heinz (Ans. 3). Forni discloses each and every limitation  
15of these claims except for the “laterally and downwardly extending lug  
16having an upper surface, wherein the upper surface defines a rounded edge”  
17(Ans. 3). The Examiner relies on Heinz to cure this deficiency of Forni.  
18Heinz discloses a friction pad assembly including a leaf spring (i.e., pad  
19spring) with lateral and downwardly extending legs 5, 6 (i.e., lugs), the legs  
20having a rounded edge (Heinz: Figs 1-3A; Col. 3, l. 5-Col. 4, l. 9). The  
21Examiner states that it would be desirable to provide the legs of Heinz to the  
22spring of Forni to facilitate attachment of the pad spring and to improve  
23security and retention of the pad spring on the brake pad as taught by Heinz  
24(Ans. 3-4; Heinz: Col. 2, ll. 9-22; Col. 5, ll. 32-43). Thus, the Examiner

1 argues that it would have been obvious to one of ordinary skill in the art to  
2 provide the legs of Heinz on the spring of Forni and that these claims are  
3 unpatentable (Ans. 6).

4       With respect to claims 1, 4-12 and 14-19, the Appellants argue that  
5 one of ordinary skill would not be motivated to modify the pad spring of  
6 Forni to include the legs disclosed in Heinz. In particular, the Appellants  
7 argue in the Appeal Brief that Forni already provides a mechanism for  
8 retaining the spring and that material and manufacturing cost would be  
9 increased if such legs are provided (Appeal Br. 5 and 6). The Appellants  
10 also argue that the number of parts would undesirably increase if such legs  
11 are provided in order to accommodate the thicknesses of different backplates  
12 (Appeal Br. 6). The Appellants further argue that the potential for cracking  
13 of the legs exists due to the large angles in which the legs are bent in Heinz  
14 (Appeal Br. 6). We do not find these arguments of the Appellants  
15 persuasive for the reasons clearly set forth by the Examiner in his Answer  
16 (Ans. 5 and 6). In the Reply Brief, the Appellants also provide counter  
17 arguments to the Examiner's Answer, but we find these counter arguments  
18 unpersuasive as well (Reply Br. 2 and 3).

19       However, the Appellants further argue in the Reply Brief that in the  
20 braking arrangement of Heinz, the relationship of the pad spring with the  
21 caliper and the brake pad is reversed as compared to the pad spring of Forni  
22 (Reply Br. 2). More specifically, the Appellants note that in Heinz, the  
23 central portion of the pad spring is held fixed to the backplate via the legs 5,  
246 while the distal ends 3 of the pad spring engage a caliper member 12 to

1bias that brake pad (Heinz: Fig. 7; Reply Br. 2). This is opposite to the pad  
2spring of Forni in which the distal ends of the pad spring 18 are held fixed to  
3the backplate 10 and in which the central portion of the pad spring contacts  
4the pad retainer 32 to bias the brake pad (Forni: Fig. 1; Reply Br. 2). Thus,  
5the Appellants contend that if the legs of Heinz were provided on the pad  
6spring of Forni and used to further secure the pad spring as suggested by the  
7Examiner, both the distal ends and the central portion of the pad spring  
8would be fixed to the backplate, thereby preventing flexing of the pad spring  
9and preventing proper functioning thereof (Reply Br. 2 and 3). Hence, the  
10Appellants argue that one of ordinary skill would not be motivated to  
11provide the legs of Heinz on the pad spring of Forni (Reply 3).

12 We are persuaded by the above argument and agree with the  
13Appellants that one of ordinary skill would not combine Forni and Heinz in  
14the manner suggested by the Examiner because such a combination will  
15result in an inoperable pad spring. Therefore, the Appellants have shown  
16that the Examiner erred in rejecting in independent claim 1 as well as claims  
174-12 and 14-19 ultimately depending from claim 1.

18 The Appellants do not provide detailed arguments regarding  
19patentability of independent claims 13 and 21, but instead, rely on the  
20arguments presented relative to independent claim 1 (Appeal Br. 7). Like  
21claim 1, the independent claims 13 and 21 both recite a laterally and  
22downwardly extending lug having an upper surface, wherein the upper  
23surface defines a round edge. These claims stand rejected based on the same  
24combination of Forni and Heinz discussed *supra* relative to independent

1claim 1. Therefore, for the same reason discussed relative to claim 1, the  
2Appellants have shown that the Examiner erred in rejecting in independent  
3claims 13 and 21 as well.

4

5 CONCLUSIONS

6 The Appellants have shown that the Examiner has erred in rejecting  
7claims 1, 4-19 and 21 as unpatentable over Forni in view of Heinz.

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9 ORDER

10 The Examiner's rejection of claims 1, 4-19 and 21 is REVERSED.

11

12 REVERSED

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17JRG

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